

AMENDMENTS TO THE CLAIMS

1. **(Original)** A method of making a medical implant containing crosslinked polyethylene that is in contact with another piece, thereby forming an interface, wherein the method comprises:

- a) compression molding of polyethylene to another piece, thereby forming an interlocked hybrid material;
- b) irradiating the hybrid material by ionizing radiation; and
- c) reducing free radicals in the crosslinked polyethylene by heating the hybrid material above the melting point of the crosslinked polyethylene.

2. **(Original)** The method according to claim 1, wherein the polyethylene comprises polyethylene resin powder, flakes, or particles, and wherein the polyethylene is compression molded to a metallic back.

3. **(Original)** The method according to claim 1, wherein the metallic back is shaped to serve as a fixation interface with the bone, through either bony growth or by bone cement.

4. **(Original)** The method according to claim 3, wherein the shapes are in the form of acetabular liner, tibial tray for total or unicompartamental knee implants, patella tray, glenoid component, ankle, elbow or finger component.

5. **(Original)** The method according to claim 1, wherein the irradiation is carried out in an atmosphere containing between about 1% and about 22% oxygen.

6. **(Original)** The method according to claim 1, wherein the irradiation is carried out in an inert atmosphere, wherein the inert atmosphere contains gas selected from the group consisting of nitrogen, argon, helium, neon, or the like, or a combination thereof.

7-11. **(Cancelled)**.

12. **(Original)** The method according to claim 1, wherein the radiation dose is between about 25 and about 1000 kGy.

13-14. **(Cancelled)**.

15. **(Original)** The method according to claim 1, wherein the piece is a metallic or a non metallic back, a ceramic, a tibial tray, a patella tray, or an acetabular shell.

16. **(Original)** The method of claim 1, wherein the piece comprises a metallic or a non-metallic mesh, an undercut, a recess or a combination thereof.

17-42. **(Cancelled)**.

43. **(Original)** A method of forming and sterilizing a medical implant containing crosslinked polyethylene that is in contact with another piece, thereby forming an interface, wherein the method comprises the steps of:

- a) compression molding of polyethylene to another piece, thereby forming an interlocked hybrid material;
- b) irradiating the hybrid material by ionizing radiation;
- c) reducing free radicals in the crosslinked polyethylene by heating the hybrid material above the melting point of the crosslinked polyethylene; and
- d) sterilizing the medical implant with a gas.

44-46. **(Cancelled)**.

47. **(Original)** The method according to claim 43, wherein the heating is carried out in an atmosphere containing between about 1% and about 22% oxygen.

48. **(Original)** The method according to claim 43, wherein the heating is carried out in an inert atmosphere, wherein the inert atmosphere contains gas selected from the group consisting of nitrogen, argon, helium, neon, or the like, or a combination thereof.

49-58. **(Cancelled)**.

59. **(Original)** A medical implant containing crosslinked polyethylene that is in contact with another piece, thereby forming an interface, obtainable by:

- a) compression molding of polyethylene to another piece, thereby forming an interlocked hybrid material;
- b) irradiating the hybrid material by ionizing radiation; and
- c) reducing free radicals in the crosslinked polyethylene by heating the hybrid material above the melting point of the crosslinked polyethylene.

60. **(Original)** The medical implant of claim 59, wherein the polyethylene is in contact with another piece, thereby forming an interlocking interface.

61. **(Original)** The medical implant of claim 59, wherein the interface is substantially sterile.

62-139. **(Cancelled)**.

140. **(Original)** An acetabular assembly comprising:

- a) polyethylene compression molded to another piece, thereby forming an interlocked hybrid component;
- b) a substantially sterile interface; and
- c) a metallic back.

141. **(Original)** The assembly of claim 140, wherein the piece comprising a metallic mesh, a non-metallic mesh, an undercut, a recess, or a combination thereof.

142. **(Original)** The assembly of claim 140, wherein the polyethylene comprises powder, flakes, or particles, and wherein the polyethylene is compression molded to a counterface.

143. **(Original)** The assembly of claim 142, wherein the counterface is metallic back, a metallic mesh, a tibial tray, a patella tray, or an acetabular shell.

144. **(Original)** The assembly of claim 142, wherein the counterface is shaped to serve as a fixation interface with the bone, through either bony growth or by bone cement.

145. **(Original)** The assembly of claim 144, wherein the shapes are in the form of acetabular liner, tibial tray for total or unicompartmental knee implants, patella tray, glenoid component, ankle, elbow or finger component.

146. **(Original)** The assembly of claim 140, wherein the polyethylene is crosslinked by ionizing radiation.

147-173. **(Cancelled)**.

174. **(Original)** A medical implant comprising crosslinked polyethylene having substantially no detectable free radicals; and a sterile interlocking interface.

175. **(Original)** The implant of claim 174, wherein the polyethylene is in contact with another piece, thereby forming an interface.

176. **(Original)** The implant of claim 174, wherein the polyethylene is compression molded to another piece, thereby forming a mechanically interlocked hybrid material.

177-185. **(Cancelled)**.